Quentin **Moreno-Gelos**

Profile

Theoretical Physicist/Data Scientist skilled in Python. My expertise lies in developing innovative theoretical models, which I rigorously confront with in-depth analysis of complex datasets that I frequently create through simulations. I enjoy collaborating on open-source initiatives.

Contact details

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Portfolio
427 route de Broche
Saint Laurent des Hommes

Personal information

Citizenship: **French**
Family: **Single without children**
Languages: **French (native)**, **English (fluent)**, , **Spanish (Intermediate)**

Software Skills

- Python
- SQL
- Fortran95
- Mathematica
- PowerBI
- HTML
- Git
- LaTeX
- MS Word, Excel, PowerPoint

Scientific expertise

- Plasma Instabilities
- Shock formation
- Laser plasma interaction
- Kinetic Particle-in-cell code (SMILEI/EPOCH)
- Magneto-hydrodynamic AMR code (FLASH)
- Machine learning

Experience

Postdoctoral fellow at *ELI-beamlines* **2019.01–2023.12**

◇ Theoretical studies on radiative/adiabatic shocks in a context relevant to laboratory astrophysics.

- Designed analytical self-similar models.
- Realized Magneto-Hydrodynamic AMR simulations on large supercalculators.
- Created AMR simulations data visualization tools (matplotlib).
- Analyzed large datasets to confront analytical models with numerical simulations.
- Collaborated with cross-functional teams to design complex laboratory experiment to assess effectiveness of analytical models.
- Published findings in peer-reviewed journals and presented at international conferences.

◇ Conducted numerical analysis to support various research projects.

◇ Supervised a first year master student during 3 months.

PhD Student at *Bordeaux University.* **2015.10–2018.12**

◇ Theoretical studies on plasma instabilities that can lead to collisionless shocks in a context relevant to laboratory astrophysics.

- Designed analytical models.
- Realized Particle-In-Cell (PIC) simulations on large supercalculators.
- Created PIC simulations data visualization tools (matplotlib).
- Analyzed large datasets to confront analytical models with numerical simulations.
- Collaborated with cross-functional teams to design complex laboratory experiment to assess effectiveness of analytical models.
- Published findings in peer-reviewed journals and presented at international conferences.

◇ Course examiner at *Bordeaux University*

- Teaching experience from Bachelor to master degree.

Publications

◇ 13 publications in peer-reviewed journals
◇ h-index: 8 (from researchgate)

Education at Bordeaux University

Doctoral Degree: Astrophysics,plasma and nuclear **2015–2018**
◇ Thesis title: *Non-relativistic collisionless shocks in Laboratory Astrophysics.*

Master's Degree: Theoretical physics **2013–2015**
◇ Astrophysics, Statistical physics, numerical methods

Bachelor's Degree: Theoretical physics **2010–2013**